

Electromechanical Testing Machines Series

LabTest 7.200 - 7.600 E.3

The LabTest E.3 Series – EDITION 30 electromechanical testing machines represent a new generation of LABORTECH test systems with a modern design and advanced LabTest 7.xxx technology platform. They combine high mechanical rigidity, precise servo control and a fully digital measuring system into a compact and ergonomic unit.

The new design is not just an aesthetic change. It features an optimized frame design, integrated safety features, clear touchpad controls, and improved workspace access. Every detail of the machine has been designed with an emphasis on operator comfort, long-term measurement stability and safe operation. The E.3 series is designed for static and low cycle tensile, compression, bending and torsional tests. To test materials under various conditions, the E.3 series machines can be equipped with a temperature chamber, a high-temperature furnace, contact and non-contact extensometers, pneumatic or hydraulic jaws and other specialized fixtures. This allows tests to be carried out according to common international standards (ISO, ASTM, EN) as well as according to specific internal customer methodologies.

Modern servo control with high dynamics and precision, integrated measuring electronics and Test & Motion software enable efficient, reproducible and fully digitally controlled testing. Automation of test methods, fast configuration, and system scalability increase lab productivity.

Safety and long-term reliability are ensured by a combination of mechanical and electronic protection against overload, override and impact. The design complies with the requirements of applicable legislation and is supplied with complete CE documentation.

Function-driven design.
Precision, flexibility and long-term

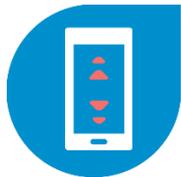


Industry

engineering, plastics, construction, automotive, research institutions and schools, etc.

Key features and benefits of the E.3 series

We use new technologies and emphasize safety...



Test frames

The E.3 Series test frame is designed for maximum robustness and accuracy, ensuring reliable performance in a wide range of test applications. Its high rigidity and precise crossbeam guidance system guarantee absolute alignment and high static and dynamic load-bearing capacity, including resistance to off-axis loads. The frame adopts 300 HV hardness guide rods with a high-precision guide bushing. Thanks to this system, the frame can be expanded with additional side test spaces. The vertical movement of the crossbar is controlled by ball screws with a lubrication system, which ensure an accurate and repeatable position in each test.



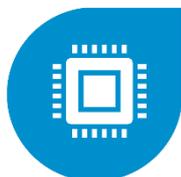
Force Sensors

For our LabTest testing machines, we use the highest quality and accuracy sensors from renowned manufacturers that can be calibrated in accordance with ČSN EN ISO 7500-1 and ASTM E4-21 standards. All force transducers have several key features in common: tensile and compressive measurement, high accuracy – accuracy class 0.02 to 0.05, extreme overload capacity of up to 300% of the rated force without failure, mechanical resistance, fatigue strength and resistance to transverse tensile and compressive forces. Each force sensor is equipped with an EEPROM, with the ability to automatically identify the load cell, store calibration constants, and multi-point linearization.



Powerful and precise AC servo drive

The E.3 Series test machines are equipped with powerful, dynamic and maintenance-free AC servo drives, providing exceptional accuracy and reliability in testing. These drives ensure consistent speeds even at extremely low values, up to 0.0005 mm/min, which is essential for performing high-precision tests. With a feedback encoder resolution of up to 2,097,152 pulses per revolution, these servo drives provide exceptional position measurement accuracy and stability of motion even at very low speeds, guaranteeing a quick and accurate response to changes during testing. The servo drive is optimized so that the return speed exceeds the standard test speed by at least 50%, which significantly reduces the time required for repeated tests.



Measurement and control electronics

LabTest test machines are equipped with powerful measurement and control electronics that ensure precise test control. Two variants are available: EDCi20x for static applications with a maximum test frequency of 5 Hz and a data communication rate of 2.5 kHz. It has 3 external slots (expandable to 16) and an effective tensile/compressive resolution of $\pm 1,000,000$ pieces. EDCi70x for both static and dynamic applications with a maximum frequency of 300 Hz and a communication rate of 10 kHz. It offers 8 external slots (expandable to 16) and a standard resolution of $\pm 250,000$ pieces. Both variants support automatic sensor identification, linearization for tension/compression, and zero force correction. The interface to the PC includes USB 3.0 and Ethernet 10/100 Mbit. The electronics meet CE standards and include ECO mode and E-Stop according to ISO 13850:2015.



Remote control of the machine

The remote control of LabTest test machines ensures high comfort and flexibility in the control of test processes. We offer a variety of driver options, including the RMCi6, RMCi7, and RMCi8 models. All controllers are designed with ergonomics in mind according to the ČSN EN 614-1+A1 standard, which ensures easy and comfortable use. The RMCi8, the highest version of the controller, is equipped with a touch LCD that allows full control of testing even without a PC connection. Users can set any speeds and perform step on the test crossbar directly on the controller. This approach increases the flexibility and efficiency of testing, while paying attention to ergonomics and operator comfort.



Test&Motion+ Trial Software

It is an essential component of any LabTest test machine and is designed to increase productivity and test quality. This intuitive software enables efficient and accurate test execution with a customizable environment for measuring the mechanical properties of materials. The user-friendly interface on the LCD touch screens makes it easy to operate. It supports international standards (EN, ISO, DIN, ASTM, GOST) and allows you to create and manage test methods for different types of tests. It provides immediate and accurate results, facilitates integration with automation systems, and offers easy export and



Test accessories

LabTest test machines are designed with flexibility and customizability in mind, allowing for easy integration of different types of accessories. The most commonly used include OPTICAL VIDEO extensometers for non-contact measurement of deformations, temperature chambers and high-temperature furnaces for testing metals according to the ČSN EN ISO 6892-2 standard, etc. These components make it possible to perform tests at various temperatures, including extremely high temperatures. Designed in accordance with the ČSN EN ISO 14120 standard, the protective safety covers ensure a safe working environment and the protection of the operator. With the possibility of expanding with a second workspace and

LabTest 7.200 Testing Machines Specifications

Technical data	Units	LabTest 7.200.1.10	LabTest 7.200.1.20	LabTest 7.200.1.30	LabTest 7.200.1.40
Product code		1.05070125	1.05070225	1.05070325	1.05070425
Test Force	kN	200	200	200	200
Machine configuration		Stand design with integrated electronics and LCD touch screen			
Measurement accuracy		Better than +/- 0.5% read down to 1/1000 of load cell capacity			
Workspace					
Workspace Width (D)	mm	630	630	630	630
Test Chamber Height - Lower (E1)	mm	1150	1585	2560	4200
Test Chamber Height - Top (E2) ¹	mm	1130	1550	-	-
Test Frame					
Machine height (A)	mm	1948	2383	3358	4998
Machine Width (B) ¹	mm	1220	1220	1220	1220
Machine Depth (C)	mm	858	858	858	858 ⁶
Pedestal height (F)	mm	480	480	480	480
Electric drive					
Crossbar speed - min	mm/min	0,0005	0,0005	0,0005	0,0005
Crossbar speed - max ³	mm/min	800	800	800	800
Crossbar Speed - Return ³	mm/min	1750	1750	1750	1750
Speed control accuracy	%	+/- 0,03	+/- 0,03	+/- 0,03	+/- 0,03
Position repeatability	µm	±1.5	±1.5	±1.5	±1.5
Machine Drive Resolution ⁵	nm	0,1271	0,1271	0,1271	0,1271
Cycle time	Hz	2500	2500	2500	2500
Engine type		AC servo motor with high torque thanks to special winding			
Feedback Path Measurement		23-bit absolute magnetic encoder with a resolution of min 2,097,152 imp, HIPERFACE			
Controller		Fully digital, 4MHz pulse frequency, EtherCAT communication interface, CAN open...			
Electrical connection					
Supply voltage/frequency	V / Hz	3Ph/N/PE/400V/50-60Hz			
Machine power consumption	kVA	3,75	3,75	3,75	3,75
Other parameters					
The basic weight of the machine	kg	177	208	233	269
Machine noise at V max ⁴	dB	67	67	67	67
Color combination	RAL	1015, 5015			
PC interface		USB, Ethernet			
Environmental conditions					
Working Environment Temperature	°C	+10 ... +35			
Humidity of the working environment	%	<90			

¹ The upper working area is not in the base of the test machine (like, accessories), the width of the machine is only a test frame without LCD monitor

² Machine weight is without force sensor and test fixtures

³ If a protective cover is not part of the test machine, the return test speed is limited in accordance with ČSN EN ISO 12100 and ČSN EN ISO 14120

⁴ The noise measurement of the machine is in accordance with the standard ČSN EN ISO 3745 - Acoustics - Determination of sound power levels ...

⁵ Minimum resolution at 2,097,152 imp/rp, at encoder resolution 8,388,608 imp/rp, machine resolution is 0.03178 nm

⁶ The machine must be anchored to the ground

LabTest 7.250 Testing Machines Specifications

Technical data	Units	LabTest 7.250.1.10	LabTest 7.250.1.20	LabTest 7.250.1.30	LabTest 7.250.1.40
Product code		1.05080125	1.05080225	1.05080325	1.05080425
Test Force	kN	250	250	250	250
Machine configuration		Stand design with integrated electronics and LCD touch screen			
Measurement accuracy		Better than +/- 0.5% read down to 1/1000 of load cell capacity			
Workspace					
Workspace Width (D)	mm	630	630	630	630
Test Chamber Height - Lower (E1)	mm	1150	1585	2560	4200
Test Chamber Height - Top (E2) ¹	mm	1130	1550	-	-
Test Frame					
Machine height (A)	mm	1948	2383	3358	4998
Machine Width (B) ¹	mm	1220	1220	1220	1220
Machine Depth (C)	mm	858	858	858	858 ⁶
Pedestal height (F)	mm	480	480	480	480
Electric drive					
Crossbar speed - min	mm/min	0,0005	0,0005	0,0005	0,0005
Crossbar speed - max ³	mm/min	620	620	620	620
Crossbar Speed - Return ³	mm/min	1350	1350	1350	1350
Speed control accuracy	%	+/- 0,03	+/- 0,03	+/- 0,03	+/- 0,03
Position repeatability	µm	±1.5	±1.5	±1.5	±1.5
Machine Drive Resolution ⁵	nm	0,1651	0,1651	0,1651	0,1651
Cycle time	Hz	2500	2500	2500	2500
Engine type		AC servo motor with high torque thanks to special winding			
Feedback Path Measurement		23-bit absolute magnetic encoder with a resolution of min 2,097,152 imp, HIPERFACE			
Controller		Fully digital, 4MHz pulse frequency, EtherCAT communication interface, CAN open...			
Electrical connection					
Supply voltage/frequency	V / Hz	3Ph/N/PE/400V/50-60Hz			
Machine power consumption	kVA	3,75	3,75	3,75	3,75
Other parameters					
The basic weight of the machine without	kg	1056	1183	1275	1440
Machine noise at V max ⁴	dB	67	67	67	67
Color combination	RAL	1015, 5015			
PC interface		USB, Ethernet			
Environmental conditions					
Working Environment Temperature	°C	+10 ... +35			
Humidity of the working environment	%	<90			

¹ The upper working area is not in the base of the test machine (like, accessories), the width of the machine is only a test frame without LCD monitor

² Machine weight is without force sensor and test fixtures

³ If a protective cover is not part of the test machine, the return test speed is limited in accordance with ČSN EN ISO 12100 and ČSN EN ISO 14120

⁴ The noise measurement of the machine is in accordance with the standard ČSN EN ISO 3745 - Acoustics - Determination of sound power levels ...

⁵ Minimum resolution at 2,097,152 imp/rpm, at encoder resolution 8,388,608 imp/rpm, machine resolution is 0.04038 nm

⁶ The machine must be anchored to the ground

LabTest 7.300 Testing Machines Specifications

Technical data	Units	LabTest 7.300.1.10	LabTest 7.300.1.20	LabTest 7.300.1.30
Product code		1.05090025	1.05090125	1.05090225
Test Force	kN	300	300	300
Machine configuration		Stand design with integrated electronics and LCD touch screen		
Measurement accuracy		Better than +/- 0.5% read down to 1/1000 of load cell capacity		
Workspace				
Workspace Width (D)	mm	630	630	630
Test Chamber Height - Lower (E1)	mm	1100	1535	2510
Test Chamber Height - Top (E2) ¹	mm	1080	1500	-
Test frame				
Machine height (A)	mm	1998	2433	3308
Machine width (B) ¹	mm	1220	1220	1220
Machine Depth (C)	mm	858	858	858
Pedestal height (F)		480	480	480
Electric drive				
Crossbar speed - min	mm/min	0,0005	0,0005	0,0005
Crossbar speed - max ³	mm/min	560	560	560
Crossbar Speed - Return ³	mm/min	1050	1050	1050
Speed control accuracy	%	+/- 0,03	+/- 0,03	+/- 0,03
Position repeatability	µm	±1.5	±1.5	±1.5
Machine Drive Resolution ⁵	nm	0,1271	0,1271	0,1271
Cycle time	Hz	2500	2500	2500
Engine type		AC servo motor with high torque thanks to special winding		
Feedback Path Measurement		23-bit absolute magnetic encoder with a resolution of min 2,097,152 imp, HIPERFACE		
Controller		Fully digital, 4MHz pulse frequency, EtherCAT communication interface, CAN open...		
Electrical connection				
Supply voltage/frequency	V / Hz	3Ph/N/PE/400V/50-60Hz		
Machine power consumption	kVA	3,75	3,75	3,75
Other parameters				
Basic machine weight ²	kg	1111	1238	1330
Machine noise at V max ⁴	dB	67	67	67
Color combination	RAL	1015, 5015		
PC interface		USB, Ethernet		
Environmental conditions				
Working Environment Temperature	°C	+10 ... +35		
Humidity of the working environment	%	<90		

¹ The upper working area is not in the base of the test machine (like, accessories), the width of the machine is only a test frame without LCD monitor

² Machine weight is without force sensor and test fixtures

³ If a protective cover is not part of the test machine, the return test speed is limited in accordance with ČSN EN ISO 12100 and ČSN EN ISO 14120

⁴ The noise measurement of the machine is in accordance with the standard ČSN EN ISO 3745 - Acoustics - Determination of sound power levels ...

⁵ Minimum resolution at 2,097,152 imp/rp, at encoder resolution 8,388,608 imp/rp, machine resolution is 0.03178 nm

LabTest 7.400 Testing Machines Specifications

Technical data	Units	LabTest 7.400.1.10	LabTest 7.400.1.20	LabTest 7.400.1.30
Product code		1.05100025	1.05100125	1.05100225
Test Force	kN	400	400	400
Machine configuration		Stand design with integrated electronics and LCD touch screen		
Measurement accuracy		Better than +/- 0.5% read down to 1/1000 of load cell capacity		
Workspace				
Workspace Width (D)	mm	740	740	740
Test Chamber Height - Lower (E1)	mm	1400	1535	2510
Test Chamber Height - Top (E2) ¹	mm	1380	1515	2490
Test frame				
Machine height (A)	mm	2370	2850	3530
Machine width (B) ¹	mm	1490	1490	1490
Machine Depth (C)	mm	960	960	960
Pedestal height (F)		575	575	575
Electric drive				
Crossbar speed - min	mm/min	0,0005	0,0005	0,0005
Crossbar speed - max ³	mm/min	550	550	550
Crossbar Speed - Return ³	mm/min	780	780	780
Speed control accuracy	%	+/- 0,03	+/- 0,03	+/- 0,03
Position repeatability	µm	±1.5	±1.5	±1.5
Machine Drive Resolution ⁵	nm	0,04721	0,04721	0,04721
Cycle time	Hz	2500	2500	2500
Engine type		AC servo motor with high torque thanks to special winding		
Feedback Path Measurement		23-bit absolute magnetic encoder with a resolution of min 2,097,152 imp, HIPERFACE		
Controller		Fully digital, 4MHz pulse frequency, EtherCAT communication interface, CAN open...		
Electrical connection				
Supply voltage/frequency	V / Hz	3Ph/N/PE/400V/50-60Hz		
Machine power consumption	kVA	4,8	4,8	4,8
Other parameters				
Basic machine weight ²	kg	1323	1450	1542
Machine noise at V max ⁴	dB	67	67	67
Color combination	RAL	1015, 5015		
PC interface		USB, Ethernet		
Environmental conditions				
Working Environment Temperature	°C	+10 ... +35		
Humidity of the working environment	%	<90		

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² Machine weight is without force sensor and test fixtures

³ If a protective cover is not part of the test machine, the return test speed is limited in accordance with ČSN EN ISO 12100 and ČSN EN ISO 14120

⁴ The noise measurement of the machine is in accordance with the standard ČSN EN ISO 3745 - Acoustics - Determination of sound power levels ...

⁵ Minimum resolution at 2,097,152 imp/rp, at encoder resolution 8,388,608 imp/rp, machine resolution is 0.03245 nm

LabTest 7.600 Testing Machines Specifications

Technical data	Units	LabTest 7.600.1.10	LabTest 7.600.1.20	LabTest 7.600.1.30
Product code		1.05120025	7.600.1.10	1.05120225
Test Force	kN	600	600	600
Machine configuration		Stand design with integrated electronics and LCD touch screen		
Measurement accuracy		Better than +/- 0.5% read down to 1/1000 of load cell capacity		
Workspace				
Workspace Width (D)	mm	900	900	900
Test Chamber Height - Lower (E1)	mm	1500	2100	2660
Test Chamber Height - Top (E2) ¹	mm	1480	2080	2640
Test frame				
Machine height (A)	mm	2730	3330	3890
Machine width (B) ¹	mm	1750	1750	1750
Machine Depth (C)	mm	1050	1050	1050
Stand height (D)		750	750	750
Electric drive				
Crossbar speed - min	mm/min	0,0005	0,0005	0,0005
Crossbar speed - max ³	mm/min	415	415	415
Crossbar Speed - Return ³	mm/min	550	550	550
Speed control accuracy	%	+/- 0,03	+/- 0,03	+/- 0,03
Position repeatability	µm	±1.5	±1.5	±1.5
Machine Drive Resolution ⁵	nm	0,03311	0,03311	0,03311
Cycle time	Hz	2500	2500	2500
Engine type		AC servo motor with high torque thanks to special winding		
Feedback Path Measurement		23-bit absolute magnetic encoder with a resolution of min 2,097,152 imp, HIPERFACE		
Controller		Fully digital, 4MHz pulse frequency, EtherCAT communication interface, CAN open...		
Electrical connection				
Supply voltage/frequency	V / Hz	3Ph/N/PE/400V/50-60Hz		
Machine power consumption	kVA	5,4	5,4	5,4
Other parameters				
Basic machine weight ²	kg	1323	1450	1542
Machine noise at V max ⁴	dB	67	67	67
Color combination	RAL	1015, 5015		
PC interface		USB, Ethernet		
Environmental conditions				
Working Environment Temperature	°C	+10 ... +35		
Humidity of the working environment	%	<90		

¹ The upper working area is not in the base of the test machine (like, accessories), the width of the machine is only a test frame without LCD monitor

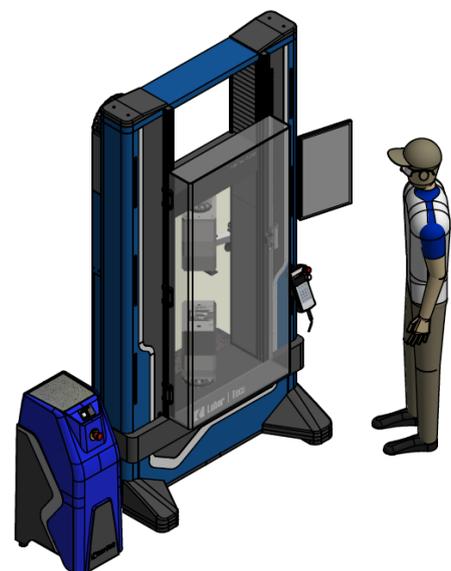
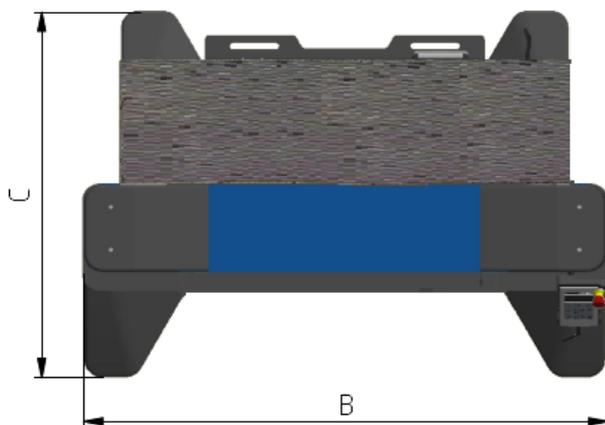
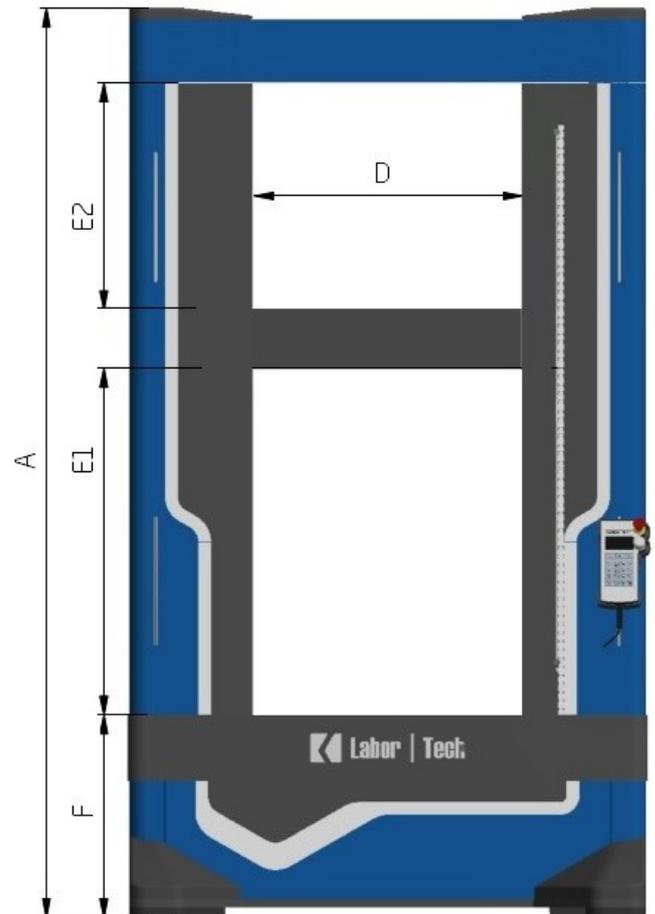
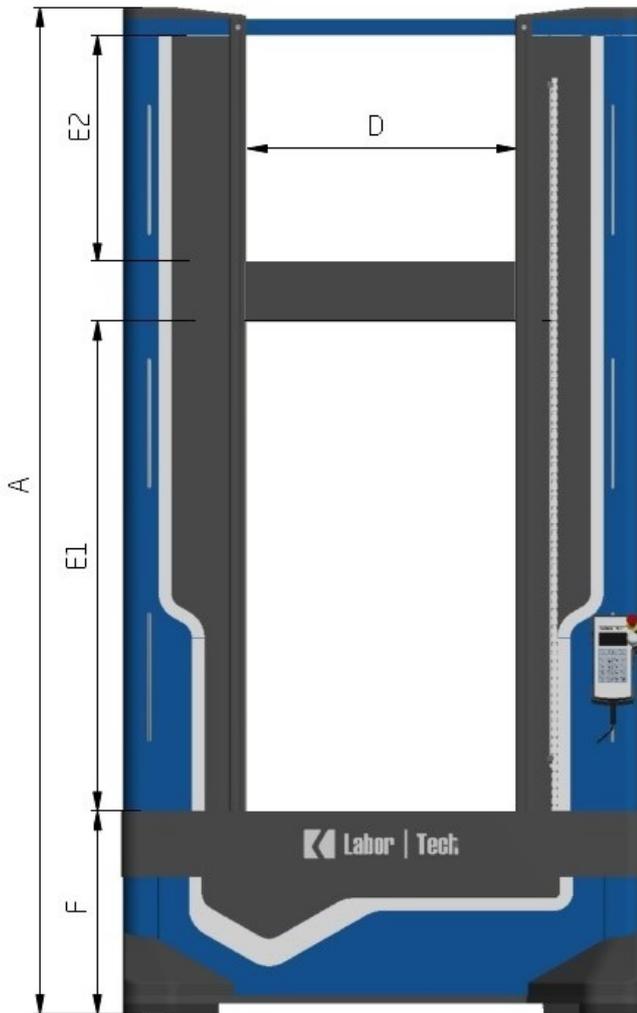
² Machine weight is without force sensor and test fixtures

³ If a protective cover is not part of the test machine, the return test speed is limited in accordance with ČSN EN ISO 12100 and ČSN EN ISO 14120

⁴ The noise measurement of the machine is in accordance with the standard ČSN EN ISO 3745 - Acoustics - Determination of sound power levels ...

⁵ Minimum resolution at 2,097,152 imp/rp, at encoder resolution 8,388,608 imp/rp, machine resolution is 0.02245 nm

Diagram of LabTest 7.200 to 7.600.1.xx Testing Machines



Various customer variants

We offer more than 50 customer variants as standard
We also supply customized applications
For more information, please contact [our sales representative](#)

Machine electronics of the LabTest series

Technical data	Units	Parameters
Electronics for Static Applications and Low Cycle Fatigue		EDCi20x (2.001030117)
Number of external slots (expandable to 16)		3
Speed of data communication with PC	kHz	2,5
Maximum machine test frequency	Hz	5
Electronics for Static and Dynamic Applications		EDCi70x (2.001050117)
Number of external slots (expandable to 16)		8
Speed of data communication with PC	kHz	10
Maximum machine test frequency	Hz	300
Other common parameters		
Real-time channel synchronization		YES
Bit accuracy of the internal driver	Bit	64
Control loop speed	kHz	2,5
Adjustable system time	µs	400/500/600... 1000
Internal processing of measured analogue	Bit	32
Calculated Resolution – Tension/Compression	Bit	21
Effective tensile/compressive resolution at the time of integration	pieces	± 1,000,000 (100ms)
Standard Tensile/Compressive Resolution	pieces	± 250,000 (20ms)
Loading speed of measured analogue quantities	kHz	20
PC interface		USB 3.0, Ethernet 10/100 Mbit
Measurement accuracy class		0.5/1, depending on load cell, sensor calibration in accordance with ČSN EN ISO 7500-1, ASTM E4-21
Linearization of Tension/Compression Sensors Separately		YES
Automatic sensor identification		YES
Identification and LOG of exceeding the sensor's max. force F		YES
Zero force correction		YES – automatic
Possibility of connecting these input channels and quantities		iDCA – strain gauges Multi analog IO Digital IO analogue ± 10 V iCFA – LVDT and 10 V analogue ± strain gauges iINC – two incremental (A/B/R) or SSI interfaces iADA – four analogue outputs and four analogue inputs (+/-10 V) iIO – 24 V DC IO (8 outputs, 8 inputs) iINCX – two incremental interfaces (A/B/R) with RS485 on MFX
Possibility to connect a remote control of the machine		YES
Types of remote control		RMCi6, RMCi7, RMCi10, LTW023 wireless control
ECO mode		YES
E-Stop by		ČSN EN ISO 13850 with monitoring
CE Compliance		under the Machinery Directive 2006/42/EC and 2023/1230
Electrical connection		
Supply voltage/frequency – external electronics	V / Hz	115 or 230/50-60/1 phase
Supply Voltage/Frequency – Internal Electronics	V/DC	24
Other parameters		
Basic dimensions of external electronics	mm	99 x 463 x 244
Color combination of external electronics	L	Alu, graphite grey
Environmental conditions		
Working Environment Temperature	°C	+10 ... +35
Humidity of the working environment	%	<90

The elements that characterize us...

We offer everything from development to implementation and listen to your needs...



Warranty and post-warranty service

From the moment our machines are delivered, our commitment does not end. We pride ourselves on standing by our products and customers even after they leave our company. In order to ensure maximum satisfaction and peace of mind with our equipment, we provide complete online warranty and post-warranty service. With our dedicated team of experts, we are here for you to provide you with the best possible support throughout the lifecycle of our products. With our online warranty and post-warranty service, you are safe, aware of our support whenever you need it.



Ecological approach

We are proud to be a company that not only develops and manufactures quality testing machines and equipment, but also cares seriously about the environment. For us, ecology is not just a phrase, but an essential aspect of our business. We are committed to minimal environmental impact and sustainable working practices. Our commitment to the environment does not end with the possession of ISO 14001:2016 certification. We believe that every step towards sustainability is crucial for *the future of our planet*.



Simple operation

In the company, our company emphasizes quality training and training for the operation of our machines. We are convinced that professional competence and the ability to be easy to use are key factors in achieving optimal results and customer satisfaction. When developing our equipment, we focus not only on performance and innovation, but also on ease of use. This allows for quick adaptation and efficient work even for less experienced users. We are here to ensure that our technologies are not only powerful, but also easy to use for all users.



Reliability, accuracy and repeatability of measurements

With LabTest test machines, the accuracy and repeatability of force and path measurements are our top priority. We have combined these key aspects with the high dynamics of electronics to guarantee a more affordable and efficient way to set up our devices. Thanks to the innovative approach to electronics in our testing machines, we have achieved excellent accuracy and repeatability in the testing process. The reliability of our equipment is important not only for research and development, but also for industrial and testing applications.



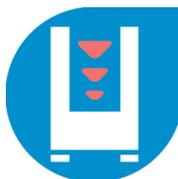
Versatility and versatility

Our LabTest test machines have a dual advantage: versatility and intuitive operation that brings efficiency to the tests themselves. By combining our high-quality testing machines with highly functional accessories, we offer versatility for a wide range of testing needs. This flexibility allows our customers to perform different types of tests and measurements with a single device, which is an economical and practical benefit. Thanks to these features, you can rely on precise results and trouble-free operation in everyday practice.



Security at the highest level

We strongly promote safety at the highest level, in accordance with the latest Directives 2006/42/EC and 2023/1230 and industry standards such as IEC 60947. Every product we create is the result of many years of experience, research and experimentation in the field of mechanical testing of materials. Our compliance with standards is documented by the EC and EU declaration of conformity, which is why we leave nothing to chance.



Mechanical resistance and maintenance-free operation

When developing our products, we emphasize that LabTest machines have robustness, rigidity, long life, mechanical durability and maintenance-free operation – these are our key priorities. Our offer includes professional engineering and consulting services, which are harmoniously intertwined in the design of systems and the implementation of the tests